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ABSTRACT

The author suggests that the U.S.A.'s population problem is not a problem in Malthusian terms, where people suffer from famine and pestilence. Instead it is a problem of quality and safety in our physical and social surroundings. Further population increase may increase the discords in our social environment caused by race prejudice, poverty, drug addiction, and crime, or make their reduction more difficult. Population growth contributes to a loss of freedom because the larger, more complex, and more crowded a society is, the more numerous and restrictive are the laws and regulations required for its governance. Today, any attempt to coerce the regulation of family size would be opposed by an overwhelming majority of Americans. A convergence of personal self-interest in economic terms and the broader social interest may bring about a profound change in U.S. attitudes and mores regarding birth control, and this can be accomplished in part by introducing the entire subject of population growth into the curricula of schools and colleges. (BR)

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Population Bulletin

Editor's Comment:

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THE POPULATION CHALLENGE OF THE '70s

Next to the avoidance of nuclear war, the foremost challenge to man in the '70s is a worldwide reduction in rates of population growth. Contrary to widespread belief in the Western world, this undertaking is not solely the responsibility of the less developed nations. Highly developed nations, such as the United States, must squarely face their share of responsibility for limiting population growth.

In these circumstances it is most fitting that the Bureau's first 1970 *Bulletin* should offer a dispassionate analysis of the U.S. population problem, a survey of the courses of action open to us, a weighing of their implications, and a preliminary agenda for achieving much lower growth rates—and eventually a stationary population—in this country. As the author points out:

"There appears, then, to be only one viable approach to the population problem in the United States. This is the long, uphill route of encouraging the American people to modify their basic attitudes and behavior so that instead of idealizing large families in the abstract and creating them in flesh and blood, we will prefer small ones and act upon our preferences; so that instead of promoting forms of economic growth which will increasingly pollute our living space, we will insist that we clean up as we go, no matter what the cost; so that instead of measuring our welfare by the amount of our consumption, we will become deeply concerned about enhancing the quality and preserving the variety of life in its numerous forms."

This *Bulletin* is so comprehensive in its consideration of the factors underlying the population problem that it will almost certainly become the basis for many of the publications we will issue during this decade. In fundamental ways, the 1970s pose a different challenge to Americans in the field of population than we have previously faced in the post-war era.

The 1950s were a decade of official neglect and public apathy toward the population crisis, despite the intense educational efforts of many private groups and individuals. During the 1960s, however, the population message was finally taken from the hands of experts and brought to the public. In a special foreign aid message in 1961, President Kennedy stated that population growth was threatening standards of life throughout the developing world. He announced the United States was willing to support family planning programs in countries receiving U.S. foreign aid. Congress, however, was not satisfied with good

intentions. At its insistence, AID grudgingly included family planning assistance in its program in 1965. Despite continued prodding from legislators, AID budgets for this purpose remained miniscule until 1968, when Congress specifically earmarked $34.7 million to be used only for population activities. (A year earlier, the family planning expenditure had been only $4.7 million out of a total AID budget of $2.7 billion.) For fiscal 1971 the family planning figure has risen to $86.0 million.

During the past decade, moreover, the United Nations moved from virtual paralysis on the population question to modest action on a number of fronts. In 1965 it sponsored a World Population Conference at which the Director-General of the Food and Agriculture Organization called upon all nations to devote themselves, without further delay, to demographic stabilization. The U.N. finally began to provide a modicum of assistance to action programs in family planning. And in an address to his Board of Governors in September 1968, World Bank President Robert S. McNamara stated in convincing terms that population growth threatened the efforts of the Bank and its members to promote economic development. Unfortunately, no strong, clear-cut action program has yet emerged from Mr. McNamara's verbal initiatives.

The 1960s also gave rise to the beginnings of governmental support for family planning activity with the United States. Programs were undertaken by the Department of Defense (for U.S. servicemen's families), the Department of the Interior (for Indians and Eskimos) and the Department of Health, Education and Welfare and the Office of Economic Opportunity (for poor families).

Although HEW issued a policy statement on family planning in 1966, it has moved with glacial slowness ever since. Even now it is reaching only a small minority of the five million low income women who are allegedly "in need" of family planning services. As late as 1969, OEO still found it necessary to run its own family planning programs for the poor—indicating that HEW hadn't exactly set the world on fire.

Furthermore, as this *Bulletin* observes, none of the U.S. domestic or foreign aid programs deals directly with the specific subject of slowing population growth; each falls within the limited sphere of family planning. In part this approach reflects the hope that, given the necessary services, people will act in their own best interests to limit the size of their families and thereby solve the population dilemma. This wishful thinking is misguided in a country such as the United States where it is not primarily the poor but middle class people who cause the population problem. Significantly, the middle class and the well-to-do already practice birth control but often want three, four or more children.

Thus, the challenge of the Seventies will be to bring all Americans, not just the poor, into a national commitment to slow and eventually stop U.S. population growth. It is encouraging that increasing numbers of people in this country are voicing a concern about the true nature and scope of our population problem. They are ready to hear not so much a rhetoric of alarm as an intelligent, many-sided debate about how our society should now proceed to control its growth.

As noted above, this *Bulletin* considers the alternatives and suggests a course of action. We are particularly pleased that it has been written by a good friend of the Bureau. Rufus E. Miles, Jr. is Director of the Mid-Career Program at Princeton University's Woodrow Wilson School of Public and International Affairs. He has long served the Bureau as a member and a Trustee, and he is currently Chairman of our Board of Trustees.

WILLIAM E. MORAN, JR.
Editor

WHOSE BABY IS THE POPULATION PROBLEM?

Rufus E. Miles, Jr.

DEMOGRAPHERS cannot agree whether the United States has a population problem in the sense of having more people (or the prospect of more people within a generation) than the nation can sustain at a high level of economic and cultural well-being. In his presidential address to the Population Association of America in April 1968, Ansley Coale took the position that continued population growth in the order of one percent annually need not alarm or even concern us. "Even if our population should rise to a billion," he said, "its average density would not be very high by European standards. It seems to me that we must attack the problems of pollution, urban deterioration, juvenile delinquency and the like directly, and if sensible programs are evolved, continued population growth in the order of one percent annually would not make the programs tangibly less effective." [3]

University of California sociologist-demographer Kingsley Davis, on the other hand, strongly endorses the goal of a zero rate of increase as soon as we can achieve it, and he is much concerned because neither governmental policies and programs nor those of private organizations promoting family planning are designed to achieve a stationary population within the foreseeable future. Radical changes would be required, he believes, to develop an effective program of bringing births and deaths into balance before the quality of civilized life deteriorates intolerably.

Clemenceau's dictum, "War is much too serious a matter to be entrusted to the military," is applicable to the subject of population. The question whether we have a population problem in the United States and, if so, what should be done about it, is much too important to be left to the demographers. Many demographers are among the first to agree.

Since the two questions, "Does the United States have a population problem?" and, if so, "What is to be done about it?" cannot be answered definitively by experts in the study of population, how are non-experts to answer them? Must we look to the President and Congress to supply answers? And if the government cannot provide them, who else can?

The analysis which follows is an attempt to work through a number of interrelated issues in search of answers to these two vital questions.

DO WE HAVE A POPULATION PROBLEM?

In Malthusian terms, the claim that the United States has a population problem cannot be supported. Our population is not pressing upon the domestic food supply. We are not threatened with the "positive checks" of famine or pestilence, and the third positive check—war—has a dynamic which, for the United States, is entirely independent of internal population pressures. The question whether this country has a population problem turns on a very different set of factors than those envisioned by

Thomas Malthus. Instead, it is related to the quality and safety of our physical and social surroundings. We must ask whether our surroundings are significantly threatened by the continuing growth in the number of persons inhabiting this continent.

Answering this question one way or the other is extremely difficult. It is not easy to separate the factor of population growth from per capita growth in the consumption of resources and the poorly regulated disposal of waste products—both of which contribute to the deterioration of our living space. No scientific means is at hand for determining the extent to which population increase may heighten the discords in our social environment caused by race prejudice, poverty, drug addiction and crime, or make their reduction more difficult. Nor have any objective criteria been developed for arriving at an "optimum population" for a given area at a given point of time. One might be sorely tempted, therefore, to give up the effort to determine whether we, in the United States, have a population problem. And yet, upon closer examination, we can see wiser alternatives than throwing up our hands in despair.

The esthetic answer

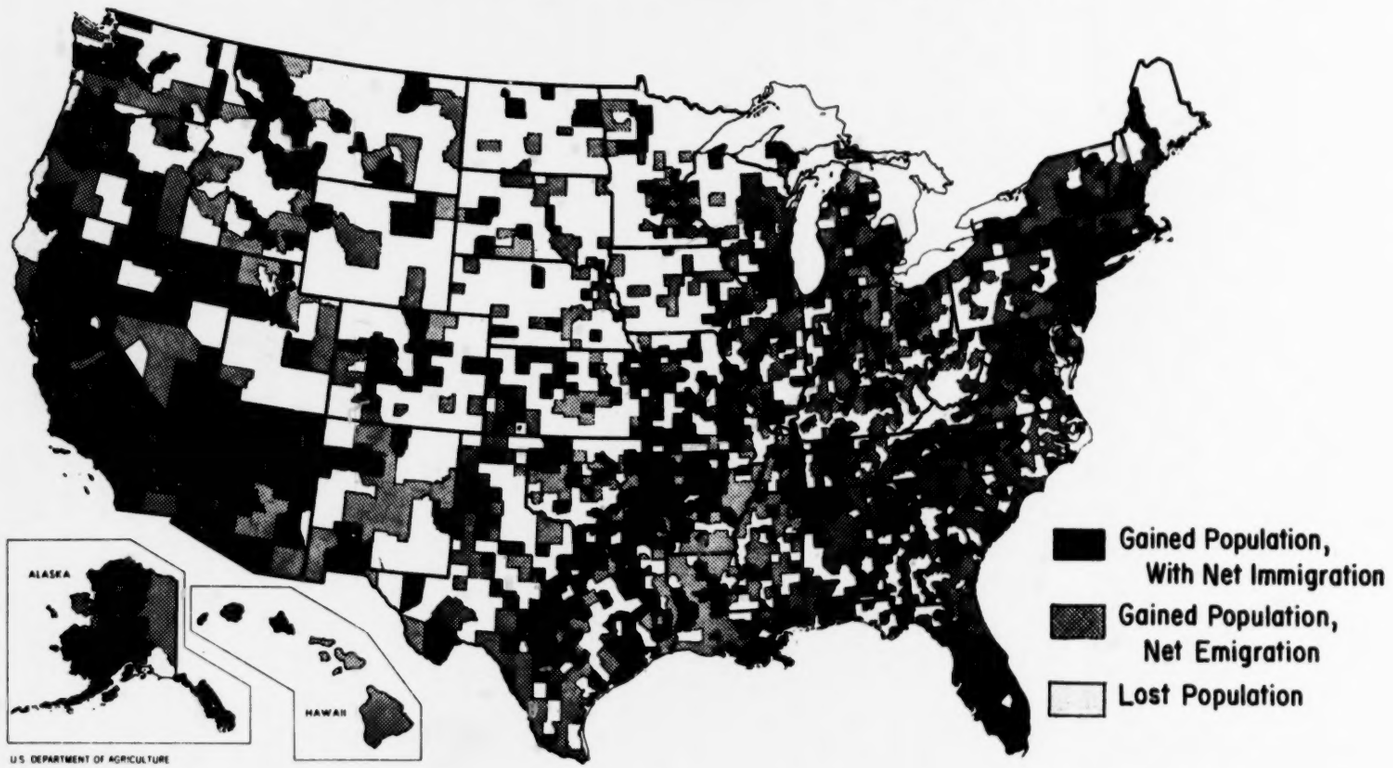
There are times and circumstances in which man's intuitive and esthetic senses serve him as more reliable guides than scientifically provable propositions. What do our intuitive and esthetic senses tell us now?

When a city dweller observes the overloading of all public facilities—for education, culture, recreation, transportation, power and communications; when he feels oppressed by crowded streets and jarred by high-decibel cacophony; when he observes the increasing irritation and incivility with which otherwise normal citizens treat one another; when he has trouble finding a livable home at a price he can afford—when these and other disamenities of urban life crowd in upon him, he may conclude that adding another 100 million people to this country's problems is not such a good idea. And 100 million is the net increase in the number of American citizens we shall have to squeeze into our subways, make way for on our streets and highways, and share parks and beaches within only 40 years hence unless we find ways of changing our traditional family patterns and mores.

But, we are counseled, city dwellers do not need to live in the cities if they do not wish to. Only those people who enjoy big-city life need stay there; the rest of us are at liberty to move elsewhere, for there is plenty of land. Such counsel has a distinct "upper income" label. It is advice by upper middle class people to other upper middle class people. The middle, lower middle and lower classes, who constitute the vast majority of the central cities, have no such option. If they did, they would not be living where they are. A nationwide poll of city dwellers, rural residents and suburbanites taken in 1966 revealed that only 22 percent of the respondents preferred to live in cities; by 1968, the ratio had dropped to 18 percent. And in January 1970, George Gallup III reported that only 13 percent of all urban dwellers interviewed said they preferred to remain in cities.[7]

Even taking account of the unrealistic and nostalgic bias which many Americans display toward the

GROWTH AND DECLINE OF COUNTY POPULATIONS, 1960-1966



Sources: U.S. Bureau of the Census; U.S. Department of Agriculture, Economic Research Service.

simpler farm life of a bygone era, this is a very low index of satisfaction with urban living. It is tantamount to a prison psychology for many urban inmates.

What land is it that central city dwellers should move to, and what is it that they should do there? The United States does, indeed, have vast, sparsely populated land areas, including Alaska, much of Oregon, most of Nevada, much of Utah, Idaho and Montana, most of the Southwest, and even substantial parts of some states east of the Mississippi. But wherever in this nation sparsely settled areas exist, there is a clear economic or social reason why few people are living there. These areas are unattractive as locations for large or even moderate-sized urban centers because of climate, topography, accessibility or availability of resources. No marked trend toward building new cities in any of the above states or in North Dakota, Wyoming, West Virginia or Maine is visible or predicted by responsible forecasters. Analyses of economic forces by very competent demographers result in predictions that most of the next 60 million to 80 million people "scheduled" to be added by the end of the century will try to find living and elbow room in and near the existing metropolitan areas. Some of the best farmland in the nation bordering on these metropolitan areas will be converted to industrial, commercial and residential uses. The price of land in such areas will continue to skyrocket. Escape from the central cities to the suburbs will become increasingly costly and infeasible for families of low or moderate incomes. The cities will remain their prison.

For many people who are fortunate enough to find respite from the cities and inspiration and renewal from natural beauty, the increasing pressure of population has become maddening. A father with young children, who was enthralled when he saw Yosemite as a child, revisits the magnificent natural wonder and spends hours in a traffic jam within the park with 40,000 people inhaling each other's exhaust fumes instead of breathing pure air and drawing inspiration from the grandeur of the cliffs and waterfalls. He and his children return home far more irritated and exhausted than uplifted. Within a few years, the great wonders of nature will, one by one, have to be rationed to the public. We may have

THE URBANIZING UNITED STATES, 1800-1968

Year	Urban Population (thousands)	%	Rural Population (thousands)	%	Total Resident Population
1800	322	6	4,986	94	5,308
1830	1,127	9	11,739	91	12,866
1860	6,217	20	25,227	80	31,444
1900	22,106	36	40,841	64	62,947
1920	54,158	51	51,552	49	105,710
1950	96,847	64	54,479	36	151,326
1968	146,235	73	53,621*	27	199,856

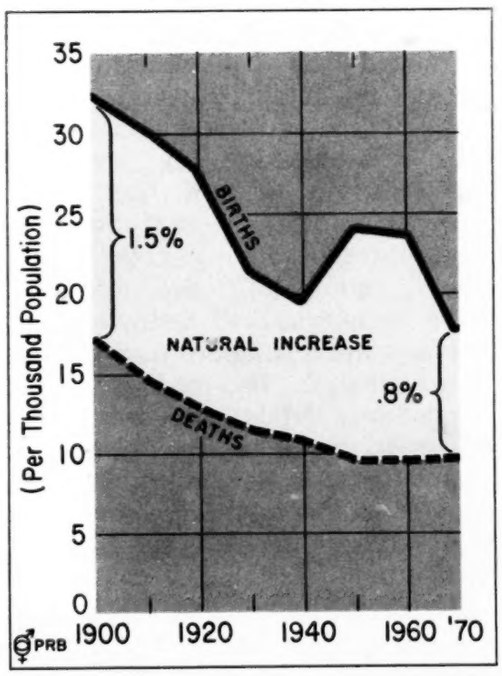
*Estimate based on extrapolation from the 1950-60 period.

Source: *Historical Statistics of the United States, Colonial Times to 1957*, U.S. Bureau of the Census.

to make our reservations months or even years in advance. Even if our population were stationary, its rising standard of affluence would steadily increase the pressure upon our parks and recreational areas. The outlook for easy access to fine recreational areas is doubly bleak given the fact that population and per capita incomes are *both* growing.

Anyone who loves the outdoors and draws refreshment from its beauty, its ozone and the feel of the wind, anyone who knows the thrill of fishing, hiking, hunting, sailing, bird-watching, mountain-climbing or any other form of communion with nature, cannot help but be aware of the diminution of these forms of recreation as one wild area after another becomes overrun and trampled under foot. For Americans who cherish a feeling of involvement with the wide diversity of nature, the thought of millions and millions and millions more people "adjusting" to an anthill culture, finally out of touch with all but man-made objects, is spine-chilling.

TRENDS IN U.S. VITAL RATES, NATURAL INCREASE



Though the U.S. rate of natural increase has dropped off markedly since 1960, it still accounts for over 1.6 million additional Americans (not including net migration) each year.

Sources: *Vital Statistics Report 1967*, National Center for Health Statistics, Department of HEW; *Monthly Vital Statistics Report*, September 30, 1969.

Erosion of freedoms

We are warned, however, that the older generation should not foist upon a new and different generation its unprovable notions of an "optimum population," for these notions are born of nostalgic recollections of the greater freedom and adventure associated with a bygone America. The new generation may agreeably adapt to, or even prefer, a denser concentration of humans than we now have, we are told. But in no single aspect of human existence is there a more compelling case for the older generation to try to transmit its wisdom to the younger generation than in respect to family size and the erosion of freedom which comes from continuing population growth. The older generation has not only a right but a duty to pass along to the younger generation what it feels it has learned as a result of longer years of living. If it believes that democracy is superior to totalitarianism, it does not say to the younger generation, "This is a matter for you to decide; if democracy does not survive, and totalitarianism takes its place, you or your children will probably learn to adjust and your children will not even know what they have missed."

We have no more justification for taking a *laissez-faire* attitude toward the erosions of freedom under continuing population growth than we do toward the loss of freedoms under encroaching totalitarianism.

Population and freedom are inextricably intertwined. The larger, the more complex and the more crowded a society is—and the more its resource base is subjected to intensely competing demands—the more numerous and restrictive are the laws and regulations required for its governance. The more laws and regulations, the less freedom. The less freedom, the more tension. That population growth significantly contributes to this loss of freedom and to increased tension seems self-evident.

The question whether we have a population problem, therefore, is directly related to the question whether we have a "freedom problem". To the extent that people are concerned about direct threats to and the slow erosion of their freedom, they must seek genuine and controllable causes. If they do, the logic of their analysis is almost certain to bring them face to face with growing population as a major cause of the diminution of human freedom. Scientists may argue for a decade or a century over how many people may theoretically be sustained on this planet and in this nation, but the strength of human desires for personal and political freedom and for mobility will determine the course of America's birth rate far more than scientific analyses.

The balance of this paper is based on the unprovable proposition but the strong conviction that we do, indeed, have a population problem. It is not, however, based on the single-minded idea that solving the population problem will, by itself, overcome most of the environmental and social ills which beset us. Though the population problem may be second in importance only to the avoidance of nuclear war, it is a mistake to consider it an all-purpose villain, the source of all of our environmental and social ills. Before we undertake to establish responsibility for solving the population problem, therefore, it may be useful to place it in a broader context.

THE FOUR ENVIRONMENTAL CULPRITS

A physical environment of high quality is essential to the kind of living Americans cherish and seek. Too many people in too small a space is one of four culprits causing an alarming deterioration in our living conditions. Three other culprits—growthmania, pollution and pesticides—deserve at least equal if not greater blame for this deterioration. *Growthmania* is the compulsive increase in per capita production of power and goods, their consumption, and the consequent generation of waste products. *Pollution* is the result of our social failure to regulate the disposal of waste products in such a manner as to prevent the serious degradation of our environment. And *pesticides,* herbicides and other chemicals — principally agricultural chemicals — poison the biosphere, sometimes irreversibly; tragically few of them have been properly tested. The relationships among these three culprits and population growth de-

"Sustained, indefinite economic growth is no more healthy or possible than sustained, indefinite population growth."

serve particular attention if each is to be seen in its proper perspective.

Growthmania

Curiously, the Malthusian insight into the dynamics of population growth has not been widely applied to economic growth. To economists, a "healthy" rate of economic growth is not less than four percent per year in constant dollars. At such a rate of increase, the Gross National Product (GNP) would double nearly six times a century. In two centuries the United States would have a GNP of more than $2,500 trillion—over 2,500 times (in non-inflated dollars) our present GNP. Virtually everybody would be a millionaire. It is an intriguingly pleasant but hardly dependable prospect.

Growth is a biological idea. All living things have built-in regulators of their growth rates. After birth, or as seedlings, they grow rapidly, then slow down to a low and fairly steady growth rate for a time, then slow down further and finally, at maturity, stop growing. When the braking mechanism goes awry, growth in certain cells of the organism continues unchecked, thereby stifling the healthy operation of other interrelated cells. Death of the organism ensues. We call this process cancer.

Sustained and indefinite economic growth, based on the steady rise in the use of energy and limited resources, is no more healthy or possible than sustained and indefinite population growth. In extreme form, the combination of continued population increase, consumption of natural resources and compulsive increases in the production of energy with its inescapable thermal, gaseous, liquid and solid pollution will, in the view of competent scientists, jeopardize the survival of the human race. Harrison Brown has pictured what could happen to man in the next 100 years if he were to continue his unchecked growth of population and production: ". . . he may well reach a point of no return—a point in time beyond which a major disruption to the worldwide industrial network would be irreversible." [1] That this critical point can be passed before we become conscious of its existence is cause for profound concern.

Only a tiny proportion of economists, however, seems very disturbed by the disamenities and diseconomies of long-sustained and unrestrained production of consumable goods. In an economy where prolonged growth at four percent or more is considered essential to hold unemployment to an acceptable level, and where such minimization of unemployment is a *sine qua non* of national economic policy, it is heresy to talk about slowing economic growth and planning for the eventual stabilization of per capita rates of consumption. Problems of resource reallocation and income redistribution—the most difficult problems of economics and politics—would then come strongly to the fore.

Economist J. Kenneth Galbraith did not increase his popularity among his colleagues by pointing out in his

U.S. POPULATION GROWTH, GNP AND ENERGY CONSUMPTION [1]

Year	Population (millions)	GNP (billion $)	Per Capita GNP ($)	Anthracite	Bituminous coal, lignite	Crude Petroleum [2]	Natural Gas	Electricity [3]	Total Energy
1930	123.1	90.4	734	1,718	11,921	5,652	2,212	—	21,503
1940	132.6	95.0	716	1,245	11,290	7,487	2,969	—	22,911
1960	152.3	263.3	1,729	1,013	11,900	12,706	6,933	—	32,552
1980	180.7	485.2	2,740	447	9,967	18,606	14,163	1,631	44,816
1988	201.2	822.8	4,088	282	13,142	24,629	21,757	2,474	62,264

1 In trillions of BTUs. Except for Alaskan bituminous coal, Alaska and Hawaii are not included in the energy totals until 1960.

2 Beginning 1930, consumption includes petroleum products (not imports).

3 Hydropower and nuclear power converted to coal input equivalents at prevailing average pounds of coal per kilowatt hour each year at central electric plants.

Sources: *Special Analysis of the Budget of the United States 1970*, Bureau of the Budget; *Statistical Abstract of the United States 1969*, U.S. Department of Commerce.

best-known work, *The Affluent Society*, some of the fallacies of the "conventional wisdom" of economics and the implications of unrestrained growth in private consumption. More recently, on the other side of the Atlantic, the British economist Ezra Mishan has unleased a stronger and more explicit attack upon the traditional doctrines of economic growth in a small volume published in 1967, *The Costs of Economic Growth*. He eloquently derides "growthmania" and its resulting diseconomies:

"Business economists have ever been glib in equating economic growth with an expansion of the range of choices facing the individual; they have failed to observe that as the carpet of 'increased choice' is being unrolled before us by the foot, it is simultaneously being rolled up behind us by the yard. We are compelled willy-nilly to move into the future that commerce and technology fashions for us without appeal and without redress. In all that contributes in trivial ways to his ultimate satisfaction, the things at which modern business excels, new models of cars and transistors, prepared foodstuffs and plastic objets d'art, electric toothbrushes and an increasing range of push-button gadgets, man has ample choice. In all that destroys his enjoyment of life, he has none. The environment about him can grow ugly, his ears assailed with impunity, and smoke and foul gases exhaled over his person. He may be in circumstances that he will never enjoy a night's rest at home without planes shrieking overhead. Whether he is indifferent to such circumstances, whether he bears them stoically, or whether he writhes in impotent fury, there is under the present dispensation practically nothing he can do about them." [11]

Few economists seem to have taken notice of Mishan's discomfiting heresy. Yet it is undeniable that as a cause of degradation of the U.S. environment, a four or five percent annual increase in GNP with its resulting generation of waste products,

and without adequate facilities and services to prevent contamination of the areas into which these wastes are dumped, is of more serious immediate and long-range consequence than a one percent annual increase in population.

Economists such as Galbraith and Mishan do not seek to bring the growth in GNP to a grinding halt. Rather, they seek a reallocation of the energies of men away from primary emphasis on growth in the production of consumable goods to a new emphasis on preserving and enhancing the quality of our physical and social environments. This will require a deliberate acceleration of the shift from private consumption to investments in facilities and services which are explicitly designed to improve the esthetics and social stability of our lives. It will require a slowing down in our lavish use of the earth's irreplaceable minerals, fuels and other resources. It will require an honest appraisal of the benefit to man of such huge expenditures as putting a man on Mars or greatly expanding our "nuclear deterrent" capabilities as compared with allocating most of the requisite billions to converting our urban prisons into decent, clean, safe and beautiful places to live. It will require more and better municipal sewage treatment plants, more parks, more and better education, more publicly subsidized drama, art and music, more and better-administered public services, and more and fairer taxes. More taxes mean less money than would otherwise be available to purchase high-powered cars, boats, snowmobiles, air-conditioners and trips to Acapulco. This belt-tightening will not be easy.

If we wish to increase our per capita production of power and consumable goods, ultimately and logically the only way we can do so is by diminishing our population growth rate. In a finite world which is exhausting its resources faster than it realizes, it is inconceivable that we can go on indefinitely increasing both population and per capita consumption. If *homo sapiens* is as intelligent as his biologic name implies, he must control both the multiplication and the greed of his species.

In economic terms, the Gross National Product and per capita income can continue to rise for quite some time without the kind of degradation of the environment we have seen in recent years *if* we simultaneously shift more of our GNP to services (e.g. education, the arts and many forms of recreation), and if we spend a greater share of our investment dollars on pollution control. This is the direction in which we must move if we are to have any hope of achieving an ecologic balance within the lifetime of our children.

Pollution

Our social failure to regulate the disposal of waste products so as to minimize their adverse effects on our physical surroundings is becoming notorious. We have exploited and ruined our natural heritage without levying upon either the exploiters or the consumers the current costs of disposing of waste products in ways which would keep the fouling of our common environment at a low level. The words "at a low level" are deliberate, since there appears to be no way, if population and per capita production both continue to increase, that technology can fully re-

dress the imbalances created. The burgeoning science of ecology is built upon a theory of the balance of nature—not a static, but a dynamic balance. The conservation movement, too, is built upon an intuitive understanding of this concept of balance. But despite the steadily expanding efforts of the Conservation Foundation, Izaak Walton League, Sierra Club, Friends of the Earth, Audubon Society and many other dedicated conservation groups, the pollution of our environment continues to get worse.

We are enormously ignorant about the indirect effects upon living organisms of our profligate conversion of matter to energy. The reduction of oxygen and the increase of carbon dioxide in the earth's atmosphere at ever-increasing rates is just now becoming a matter of concern and study, but the implications of a general shortage of oxygen or a surplus of carbon dioxide in the earth's atmosphere are incalculable. In Tokyo, the police receive free, and private citizens pay for, doses of oxygen to sustain them during periods of intense atmospheric pollution which come more and more frequently. In growing numbers of U.S. communities, children are asked not to play outside during peak periods of air pollution, which likewise come more and more often. Plants and animals cannot cry out in their agony of suf-

SAGA OF THE U.S. PASSENGER CAR

	Year			
	1940	1950	1960	1967
U.S. Passenger Cars and Taxis Registered (thousands)	27,466	40,339	61,682	80,414
Total Mileage U.S. Passenger Cars (millions)	249,600	363,673	586,093	766,758
Total Fuel Consumption U.S. Passenger Cars (million gallons)	16,323	24,305	41,169	55,304
Pollutants Emitted by U.S. Passenger Cars (tons)				
carbon monoxide	n.a.	n.a.	46,000,000	61,000,000
hydrocarbons	n.a.	n.a.	14,000,000	16,000,000
nitrogen oxides	n.a.	n.a.	5,000,000	6,000,000
lead	n.a.	n.a.	160,000	210,000
World Registration Cars, Trucks, Buses	n.a.	70,424	126,908	200,582
U.S. Registration Cars, Trucks, Buses	n.a.	49,528	73,000	90,040
U.S. Share World Registration Cars, Trucks, Buses	n.a.	70%	58%	45%

The automobile is the means by which Americans have achieved unprecedented mobility. As more Americans drive more passenger cars which consume more and more fuel, the deleterious impact on air quality rises markedly. Meanwhile, other parts of the world are increasing their share of motor vehicle traffic.

Sources: National Air Pollution Control Administration; *Statistical Abstract of the United States 1969*, U.S. Department of Commerce.

focation in order to receive emergency treatment. They just moan and quietly die. The number of such "side" effects from the massive conversion of matter to energy may exceed anything which we now imagine.

Pesticides

The fourth threat to our physical environment is our extensive use of chemicals as a means of expanding food production, decreasing human disease and increasing human comfort. In many cases these purposes are accomplished by poisoning pests with the most "efficient" insecticide. The lesson of DDT deserves to be reiterated again and again until the American people and the peoples of the rest of the world fully understand what a distinguished biologist, Garrett Hardin, calls the basic ecological law: "We can never do merely one thing." Specifically, the world must wake up to the hazards of widespread application of inadequately tested chemical agents. The concentration of DDT and its metabolites (particularly DDE) in birds and fish from the Arctic to the Antarctic, and their responsibility for the gradual decline and probably imminent extinction of many species of eagles, hawks, ospreys and other birds, are warnings that without far greater protection of our environment from harmful chemicals, we ourselves may wake up dead, as Mr. Dooley used to say. Man draws his sustenance from the top of many long food chains. If he continues to introduce poisons into these food chains, he, like the falcons and the eagles, may become the unwitting victim of his own blind cleverness.

Unless we now commit enormous funds to protect our physical environment, we shall be worse off at the end of the decade than we are now. Is there strong enough public backing to spend such sums? Probably not yet. To the extent that the needed reduction in pollution is achieved through legal requirements and penalties upon the producers of goods and wastes, the ultimate cost will be paid by consumers in the form of higher prices. And to the extent that publicly supported waste treatment facilities and other forms of public investment are required to bear the brunt of the burden, higher taxes will be necessary. Unless the federal tax base is used, the benefits from such higher taxes and expenditures may not accrue to those who tax themselves to reduce pollution. Their actions may benefit their downstream or downwind neighbors, while their upstream and upwind neighbors make no similar sacrifice. Yet the competition for the federal tax dollar is enormous, and the pressure for a reduction in federal taxes is never-ending.

Those who feel that the degradation of our physical environment can be stemmed entirely by strengthening social action against polluters, with no concern for the adverse effects of sheer growth in population and products and waste, have the burden of proof upon them. People who conscientiously apply their energies toward controlling and reducing the spewing of wastes and poisons into our environment deserve all the help, encouragement and money we can channel their way. But all the help they can get will not be enough. Ultimately—and the sooner the better—there must be a shift in the fundamental concerns of our society

from a preoccupation with growth in the quantity of everything around us to a realization that quantity and quality have become irreconcilable enemies of one another. One essential ingredient in this shift will be a national consensus for achieving, over some roughly acceptable period, a stationary population.

The four culprits in the degradation of our living space—population increase, economic growthmania, pollution and chemical poisons—require a simultaneous attack. They are interrelated. Devising methods to constrain any one of these culprits while ignoring the others may produce only a transitory lull before our environment resumes its downward slide.

ACHIEVING A STATIONARY POPULATION: BASIC APPROACHES

Of the four reasons for the deterioration of our environment, population growth is regarded by most people as being least subject to intelligent human control. Influencing birth rates by national policy has been tried in other nations and has been found extremely difficult. The question is, what are our options? If the population problem is as important as we assert, who is going to take responsibility for doing something about it, and what can and should be done? Whose baby *is* the population problem?

Let us examine the alternatives.

The scientific solution

We live in what may be the waning days of simplistic faith in science and technology. Yet many people still retain a hope that somehow science will solve our population problem before we become a human anthill. It would be an enormous relief if such hope were well founded, but it isn't.

There are certain things scientists can do and others they cannot. Continued research into the means of fertility control is the crux of their potential contribution. We have every reason to hope that more and better research will yield a wider variety and possibly safer and more reliable methods of fertility control. Scientists may even find a method which is acceptable to the principal religious groups which now oppose the use of contraceptives. Public and private support for such research is substantial and important.

Nevertheless, if scientists were to develop a new means of fertility control with "ideal" characteristics, the basic question would remain: How will people elect to make use of such a scientific advance? If they use it but continue to have appreciably more children than are needed for replacement, the problem of how and when birth and death rates will be brought into balance would remain. Scientists would then be impotent. Even in an autocratic state, it would not be the scientists but the government which would face the problem of what to do. If coercion were the answer, further scientific discoveries would not be needed. Compulsory sterilization would be one obvious means of enforcing a coercive population policy. However, not even the most authoritarian

of societies has contemplated such extreme action.

The further potential of agricultural scientists to relieve population pressure in underdeveloped nations is worthy of comment. If scientists should find more effective ways of enlarging the world's food supply, as they have done again and again during the past century, they might provide at best a temporary reprieve. Even on the dubious assumption that their effort involved no further environmental damage, it could only briefly defer the unavoidable necessity of achieving a zero rate of population growth. Genetics, agronomy and chemistry cannot much longer increase yields per acre at rates which will expand the world's food supply faster than the current two percent annual rate of world population growth. In classical Malthusian terms, then, the effort to stave off malnutrition in the developing nations is getting harder and harder. Should this effort finally collapse, the suffering among the world's hungry majority would reach such an unprecedented scale that it would impel national societies in the direction of more authoritarian governments.

Moreover, as we learn more about the hazards of insecticides, irrigation and fertilizer runoff, we discover that many of our so-called advances in the production of food and the reduction of disease are, in fact, obtained at the high cost of poisoning our environment. Lake Erie's death can be attributed in part to the profligacy with which we have used fertilizers. Vast areas of the world have been salted into wastelands by improvident irrigation. And DDT, a persistent poison, has circled the globe and found its way into all our bodies.

For a century and a half, agricultural scientists have done a monumental job of postponing Western man's need to face up squarely to the old Malthusian imperatives. Yet through their ecological delinquency, these same scientists are *speeding up* the arrival of new, subtler imperatives—those of environmental decay. We thus face a paradox. The "Green Revolution" has been advanced as a means of buying time against starvation; it may actually be *losing* time for the entire human race.

When the problem of population pressure is examined diligently, it is clear that it is not going to be solved by scientists. It is a non-scientific problem. The question is not whether births and deaths will be brought into balance, but when and how and at what level. This is a problem for each nation to decide. Each will answer it differently, depending on its economic status, political institutions, cultural traditions and other factors. Controlling population is primarily an economic, cultural and political problem, not a scientific one.

Freedom of choice

"The opportunity to decide the number and spacing of children is a basic human right," says the 1966 United Nations Declaration on Population.[15] This statement means different things to different people. It was written to encourage the provision of family planning services throughout the world. The hope of its proponents was that if extensive family planning services were provided in the less developed countries, they would markedly assist in bringing down

"As recently as February 1970, the U.S. government was still hoping to accommodate, not slow down, population growth."

birth rates. But the declaration is worded in such a way that it can be, and has been, approved by persons who favor large families and high birth rates. It contains no expression of desire to lower birth rates.

The "freedom of choice" approach is also the domestic policy of the United States. It was originally expressed by President Lyndon B. Johnson in his 1966 Health Message to Congress:

"We have a growing concern to foster the integrity of the family, and the opportunity for each child. It is essential that all families have access to information and services, that will allow freedom to choose the number and spacing of their children within the dictates of individual conscience." [10]

This policy was restated by President Nixon in his "Presidential Message to Congress on Population" on July 18, 1969, but the tone and emphasis were different:

"Finally we must ask: how can we better assist American families so that they will have no more children than they wish to have? In my first message to Congress on domestic affairs, I called for a national commitment to provide a healthful and stimulating environment for all children during their first five years of life. One of the ways in which we can promote that goal is to provide assistance for more parents in effectively planning their families. We know that involuntary childbearing often results in poor physical and emotional health for all members of the family. It is one of the factors which contribute to our distressingly high infant mortality rate, the unacceptable level of malnutrition, and the disappointing performance of some children in our schools. Unwanted or untimely childbearing is one of several factors which are driving many families into poverty or keeping them in that condition. Its threat helps to produce the dangerous incidence of illegal abortion. And finally, of course, it needlessly adds to the burdens placed on all our resources by increasing population." [12]

Neither President Johnson nor President Nixon has at any time suggested that people who want and can afford large families should be affected by any considerations other than their own desires, nor have they proposed that the government should exercise leadership in slowing and eventually stopping the growth of the U.S. population. A careful reading of President Nixon's words, however, gives some hope that a significant change may be in the offing. The statement "needlessly adds to the burdens placed on all our resources by increasing population" conveys a very clear impression that the President believes increasing population has become more of a burden than a national asset. There are other evidences that he is moving toward a more explicit statement of this position. Certainly, the sheer fact that he is the first President to have sent a special "Presidential Message to Congress on Population" is evidence of his greater interest and concern for the problem than any previous President has shown. Not

only his speeches but his budgets reflect this interest and concern.

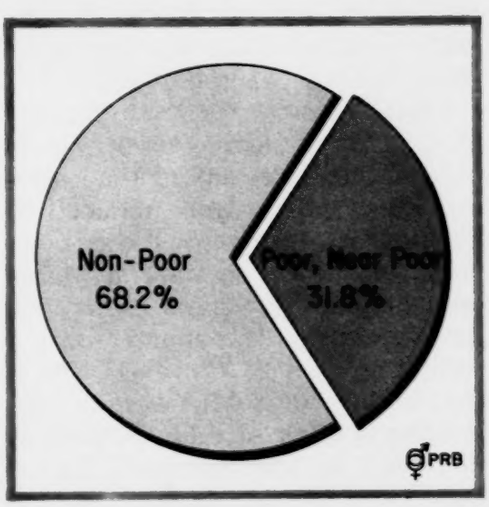
Nevertheless, as recently as February 1970, the U.S. government was still hoping to accommodate, rather than slow down, the projected rate of population growth in this country. It was still following the approach which has guided the Planned Parenthood Federation ever since Margaret Sanger founded this organization in 1916. The goal is to permit married couples to choose consciously and freely whether and when they wish to have children. This is a family planning policy, a freedom of choice policy, but not a population policy. In a recent issue of *Science*, Oscar Harkavy, Frederick Jaffe and Samuel Wishik stated:

"To our knowledge, there has never been an official policy regarding the virtue or necessity of reducing U.S. population growth, much less achieving population stability. . . . It is clear that the federal program has been advanced, not for population control, but to improve health and reduce the impact of poverty and deprivation." [9]

Many of the proponents of this federal policy hope it will appreciably reduce the rate of U.S. population growth. But if they imagine that it alone will slow population growth rapidly enough to avoid extremely adverse consequences to our environment and our society, their assumptions are open to question.

In a memorandum to the National Academy of Sciences in 1967, converted into an article for *Science*,[5] Kingsley Davis adduces a good deal of evidence which raises major doubts, even if it does not conclusively disprove the theory, that there is a direct causal connection between trends in the birth rates of developed and developing countries and governmental programs to make contraceptives widely available in these countries. His main thesis is that economic influences, cultural mores and the motivation of parents and future parents are far more important in determining family size than the availability of free contraceptives. Davis concludes that if we are to achieve a zero rate of growth in the foreseeable future, we must do more than rely upon the distribution of free contraceptives to the poor (who are almost exclusively the target group in U.S. family planning programs). We must devise ways of changing individual and social attitudes, governmental policies and incentives, and through these, the motivation of young people and adults in all socioeconomic groups.

PERCENTAGE SHARE OF ANNUAL U.S. BIRTHS, 1960-1965 AVERAGE



Source: Campbell, Arthur. "The Role of Family Planning in the Reduction of Poverty." *Journal of Marriage and the Family*, Vol. XXX, No. 2, 1968. Derived from special tabulations by the Bureau of the Census from the *Current Population Survey*, March 1966.

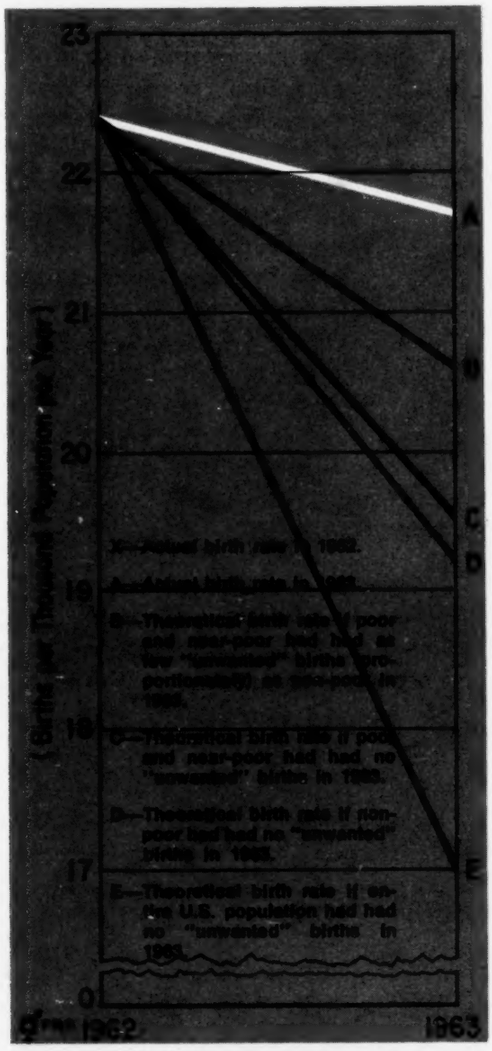
One may argue how important it is to distribute free contraceptives among poor people without simultaneously encouraging them to revise downward the number of children they want. What is not arguable, however, is that an average completed family size well above the replacement level exists among the non-poor. Most Americans labor under the illusion that the continued growth of the U.S. population is caused by poor people who have large families, and that if the poor had families of the same size as the non-poor, we would have no significant population problem. *The fact is that much more than half the population increase in this country is contributed by non-poor families who regularly practice contraception.* Although "unwanted" births pose a significant problem, the contracepting middle class desires more children per "completed" family than the average of 2.2 needed for replacement. As Adolph Schmidt, U.S. Ambassador to Canada, has said: "The major problem is not the *'unwanted* child' but the *'wanted* child.' " [13]

Clearly, *some* reduction in the rate of U.S. population growth would occur if birth rates among the lowest economic groups were reduced to the level of the rest of the population. The poor do have a higher percentage of unwanted births than the non-poor. It appears from a variety of studies, however, that if the poor and near-poor were to control the number of their children as efficiently as the non-poor (i.e., if they had proportionately as few unwanted births), the U.S. birth rate would fall by only about five percent. This would make some contribution to the objective of reducing population growth, but it would obviously not go very far in that direction.

In 1965, a National Academy of Sciences report stated: "The importance of high fertility among the underprivileged lies not so much in its contribution to the national birth rate as in the difficulties that excessive fertility imposes on the impoverished themselves." [4] This appraisal of the significance of high fertility has been the basis of the U.S. policy in respect to "family planning." Close reading of governmental messages and statements reveals that the domestic U.S. family planning effort is a component of the nation's health and anti-poverty programs. The government seeks only to fulfill the United Nations declaration that people should be given "the opportunity to decide the number and spacing of children." Whether the provision of this opportunity has any prospect for achieving an acceptable balance between births and deaths in the United States is a matter which seems, up to the present, to lie outside the concern of our public leaders.

Nonetheless, the government's avowed intent of making family planning services widely available, especially to people with low incomes and limited access to medical services, should have a very important bearing upon reducing the number of unwanted births. In social and psychological terms, unwanted births are the most urgent group to be prevented, and in economic terms they should be the cheapest to prevent. Since in these cases the motivation already exists to limit family size, large educational and incentive costs are not required. The momentum of the government in this direction deserves every possible encouragement.

U.S. BIRTH RATE: IMPACT OF "UNWANTED" BIRTHS



"Unwanted" births among the well-to-do in 1963 accounted for a larger share of the U.S. birth rate than did "unwanted" births among low-income groups. If the poor and near-poor had had proportionately as few "unwanted" births as the non-poor, the U.S. birth rate would have dropped only five percent (from 21.7 to 20.6). "Unwanted" refers to the attitude of one or both parents—not necessarily both.

Source: PRB computations from data in "The Extent of Unwanted Fertility in the U.S." Remarks by Charles F. Westoff, Annual Meeting of Planned Parenthood-World Population, Oct. 28, 1969.

In short, the U.S. government has finally recognized and financed the freedom-of-choice route to family planning as a means of improving health and reducing poverty, but it has never stated a policy of seeking to reduce and eventually stop population growth for the nation as a whole. Family planning by millions of couples is not population planning by anybody.

Mutual coercion

It is hardly surprising that the collective result of individual decisions by adult Americans operating on a freedom of choice basis, influenced by the traditional ideal of the large family, the growthmania of business, advertising and the profession of economics, is a continuing increase in the U.S. population in the order of one percent per year. At this rate the United States would gain another 100 million people by the year 2010—a date which is only as far in the future as the beginning of the Great Depression is in the past.

To those who believe something more needs to be done than to allow the free market and the freedom of choice system to continue on their way, two primary alternatives suggest themselves. Either the freedom-of-choice principle must be abandoned or the influences upon parents and children must be changed. Each alternative deserves careful analysis.

Conceivably, family size could be regulated by fiat, such as permitting families to have a specified number of children and enforcing required sterilization when each family reaches its maximum allowance. Other less drastic forms of coercion could be devised. Whatever the form, the concept of coercion in the

"Any bid to coerce the regulation of family size would today be opposed by an overwhelming majority of Americans."

regulation of family size is startling and alien to the American people. Nevertheless, it has been very seriously advanced as our only salvation.

The case for "mutual coercion, mutually agreed upon," has been forcefully made by Garrett Hardin. In his 1968 presidential address to the Pacific Division of the American Association for the Advancement of Science (converted into an article in *Science* titled "The Tragedy of the Commons"),[8] Hardin makes use of an illustration by William Forster Lloyd (1794-1852) which describes the consequences when a group of herdsmen uses a large pasturage as "a common." Each herdsman seeks to maximize his gain. When grazing on the commons reaches the maximum density short of environmental deterioration, each herdsman asks himself whether he should add one more animal. He calculates that one more animal will benefit him positively more than it will reduce the food supply for his share of the total herd. Since all herdsmen act upon such "rational" calculations, the final effect is severe overgrazing and the irreparable ruination of the commons. Tragedy then descends upon all the herdsmen.

The lesson of the commons seems simple and clear. Mutual agreement to limit the number of animals upon a limited land area—an agreement supported by coercive sanctions when necessary—is imperative to avoid collective tragedy. Since men are capable of "overgrazing" their land, water and air in many more ways than lower animals, the analogy of coercive action to limit the number of human animals seems obvious. Numerous examples of human "overgrazing" of various components of the U.S. environment can be adduced. Our environment is unquestionably deteriorating.

The major culprit in this "tragedy of the commons" is, in Hardin's view, mankind's propensity to have too many children. As we have seen, population pressure is one of the four major culprits in the overgrazing of the commons, but it cannot fairly be regarded as *the* culprit or even as the worst culprit. Be that as it may, Hardin maintains that in respect to controlling the portion of environmental degradation which is caused by population growth, it is unreasonable and in the long run against the public interest to appeal to people's consciences to limit the size of their families. The people with the strongest conscience, he says, will produce the least children, and those with the least conscience will have the most children. The only intelligent alternative seems to Hardin to be mutual coercion mutually agreed upon. He makes the argument sound logical. But is it? Let us examine its applicability to "the commons" of the United States.

The analogy of the commons is based upon an assumption that each "grazer" is free to decide whether he will increase his use of the commons, and that it will always be in his best economic interest to do so. But children are no longer economic assets as they once were in agrarian economies, particularly those with expand-

ing frontiers. In today's "post-industrial economy," children are expensive pleasures; they are economic liabilities rather than assets.

Most married couples believe that children will afford them psychological satisfactions for which they are willing to pay. Some feel that the absence of children will cause them psychic strains and embarrassments which they are willing to pay to avoid. The psychic rewards of parenthood seem especially important to persons who are deprived of either the satisfactions which come from steady employment or those which come from adequate social and recreational contacts. In any event, since children are economic liabilities, the willingness of adults to deprive themselves of a portion of their economic income to achieve this particular form of psychic satisfaction has nothing in common with the willingness of herdsmen to add to their flocks.

There is no conflict, therefore, between the economic self-interest of married couples to have small families and the collective need of society to preserve "the commons." It is in both their interests to limit procreation to not more than a replacement level. Unfortunately, couples do not seek their self-interest in economic terms alone, but in terms of total satisfactions. They are "buying" children and paying dearly for them. The problem, therefore, is compounded of how to persuade couples to act more in their own economic self-interest and that of their children; how to assist them in obtaining more psychological satisfactions from sources other than large families; and how to replace the outworn and now inimical tradition of the large family with a new "instant tradition" of smaller families. This is an entirely different problem than that of the herdsmen on the commons.

Even if we were to place the broadest possible construction on Hardin's analogy and substitute the concept of general self-interest for that of economic self-interest, his conclusion that we need "mutual coercion, mutually agreed upon" runs up against an almost insuperable obstacle in a representative democracy such as ours. Coercion requires laws with appropriate sanctions, and laws vary in the degree of support needed for their enactment. At one extreme, on a relatively non-controversial subject against which there is no organized opposition, a small pressure group may push through a law which deeply concerns its members. At the other end of the spectrum, if a small segment of the population feels vehemently antagonistic to a particular proposal, even though it is mildly favored by a clear majority, the organized minority can effectively delay or entirely prevent the enactment of such legislation. Only when the majority is numerically overwhelming or profoundly committed to certain proposals will they be enacted.

It seems abundantly clear that any bid to coerce the regulation of family size would today be opposed by an overwhelming majority of Americans and, looking ahead, it would be opposed by a very substantial group of persons who would fight such legislation with all the emotional force at their command. Under such circumstances, any suggestion that we adopt "mutual coercion, mutually agreed upon" seems hardly to fall within the art of the possible. Non-coercive

measures are the only forms of legislation which have any reasonable chance of enactment in the 1970s and 1980s.

Redirecting society's momentum

There appears, then, to be only one viable approach to the population problem in the United States. This is the long, uphill route of encouraging the American people to modify their basic attitudes and behavior so that instead of idealizing large families in the abstract and creating them in flesh and blood, we will prefer small ones and act upon our preferences; so that instead of promoting forms of economic growth which will increasingly pollute our living space, we will insist that we clean up as we go, no matter what the cost; so that instead of measuring our welfare by the amount of our consumption, we will become deeply concerned about enhancing the quality and preserving the variety of life in its numerous forms. These goals require a change in the momentum of our society. They require, among other things, a societal consensus to stop the growth of the U.S. population within a generation and possibly sooner.

Changing the momentum of society sounds next to impossible. But at this very instant it is already undergoing a profound change. The question is, what will its new direction be?

Ideas move the world. Today we are at a juncture in human affairs when man is seeking new forms of self-realization. The traditional mode of amassing the largest possible aggregation of money and goods is clearly not satisfying to his psyche. He must move on.

No one who is in close touch with members of the younger generation can doubt that a major shift in how they see the world is emerging. They are disenchanted with the goal of material accumulation (while happy to spin off in a Jaguar XKE), and they are seeking, but not yet finding, adequate new forms of self-actualization. Their experiments with drugs and the dead-endedness of that route indicate how desperate they are for genuine self-fulfillment. Simultaneously, an increasing minority of the past-thirty generation is uncomfortable about a society which measures the worth of everything by how fast it is growing, a society which has nearly abandoned beauty in its art forms, a society which tolerates with helplessness the steady degeneration of its physical and social environment.

The young in spirit of all ages are rousing themselves and beginning to show that they see the world from a new perspective and that they have new perceptions of their own self-interest. The explosive concern for ecology and conservation is one major evidence of this change. A surprising number of people have become exercised about saving the most beautiful components of our physical heritage. And, in a different direction, growing numbers of people, especially young people, have acquired another insight into man's self-interest which may be equally essential to his survival. This is the realization that the safety and security of all groups within a generally affluent society such as that of the United States will be severely jeopardized if the basic material, social and personal needs of any significant segment of society are conspicuously ignored or flagrantly thwarted. The

"A societal consensus is required to stop the growth of the U.S. population within a generation and possibly sooner."

build-up of frustration which results from such repression cannot help but threaten the stability of society at large. A crucial question is whether we will discover our true self-interest soon enough to prevent seismic disturbances in our society which, in turn, might send us back down to a lower level of culture, affluence and influence in the world.

Man can survive if he uses his esthetic sense, his ethical insights, his wits, and the eighty-man-power energy which John Stuart Mill said comes from conviction. He will certainly backslide badly, or conceivably finish himself off, if he does not make a basic and rapid shift in his perceptions of his own self-interest.

From ideas to institutions

All great ideas which deeply affect the mores and institutions of a democratic society such as the United States pass through a series of stages. A simplified schema of these stages follows:

1. A few individuals "crying in the wilderness."
2. Small groups, working together informally at first and then in small struggling organizations, sometimes with the help of venture capital from foundations.
3. Mass media coverage, slight at first but slowly increasing, thereby achieving respectability for the subject as a topic for general discussion; more foundation support; the beginnings of university interest.
4. Bills introduced into Congress by a few legislators, designed to open the attack on the identified problem.
5. Crystallization of opposition to the specific proposals, resulting in unavoidable delay in achieving further progress.
6. Appointment of one or more high-level advisory commissions of distinguished citizens to make policy recommendations and win public support for legislation.
7. Serious Congressional hearings, culminating in legislation usually of modest scope and funding.
8. Increasing acceptance of the legislation, its strengthening in structural and financial terms, and its incorporation into the institutions and mores of society.

The birth control movement launched by Margaret Sanger in 1916 has gone through most of these stages. In respect to the provision of family planning services it has moved up through stage seven, and there is little doubt that it will move on to stage eight in the near future. The anti-pollution movement has also passed through stage seven on its way toward stage eight. In its case, however, the costs are so enormous and the institutional resistances so great that to achieve an *adequate* level of governmental regulatory action and financial aid—a level which will assure that we are gaining on pollution rather than continuing to fall behind—will require a vastly greater expenditure of resources than is needed to move from stage seven to stage eight in family planning.

Furthermore, as has been pointed out, family planning is not popula-

tion planning. We seem to be only at stage two, moving toward stage three, with regard to an explicit policy for slowing and eventually stopping population growth. Many people are psychologically ready to listen to the arguments for such a policy, but few have given much thought to the specific steps by which a zero rate of population growth can be achieved. The social and economic consequences of zero growth also need to be explored in detail. Consequently, we have not yet reached the early legislative stage in the population movement. Even private non-profit organizations are just beginning to think and talk about the need for zero population growth.

It is clear, therefore, that a stationary U.S. population will be accepted as an idea whose time has come only if the relatively few individuals and institutions who now see the goal devote their time and resources to gaining widespread understanding, support and governmental action. Private individuals, private non-profit organizations and educational institutions will be the key to success or failure in this effort. Waiting for the federal government to take action is like waiting for oneself to act. The government needs a broad base of support before it can move. Writing one's Congressman now will be of little avail, for not a single bill designed to achieve a stationary U.S. population now awaits the disposition of Congress.

For those who would adopt zero population growth as an important and urgent idea, what forms of nourishment can they give it? First, they can join with others who share the same conviction and obtain the mutual reinforcement which comes from discussion, interaction and organizational activity. Secondly, they can think through the successive steps that will bring about a stationary population, and they can set forth the economic and social repercussions which might ensue, along with proposals for absorbing them into our institutions and mores. And thirdly, when they have arrived at conclusions about achieving and adjusting to zero growth, they can convey their insights to others and devote their time and money to supporting kindred organizations. This is the most difficult and important step in the process of converting a seminal idea to living institutional forms.

ACHIEVING A STATIONARY POPULATION: A PRELIMINARY AGENDA

Bringing the U.S. population growth rate down to zero within a generation has many implications and ramifications. It is not feasible within the scope of this analysis to explore each of them. It may be helpful, however, to outline and comment briefly on some of the major elements of consideration.

The two-child family

If we are to arrest the growth of U.S. population by the end of the century, the two-child family must voluntarily become the norm. Today an average of just under 2.2 children per completed family is required for replacement, but if the socially accepted norm were two children, the

number of families which exceeded two would probably be more than those which had less than two, and the result might come close to replacement. In any event, we cannot expect to achieve the replacement birth rate of 220 children per 100 completed families either quickly or precisely.

The achievement of a consensus on the norm of a two-child family may prove to be extraordinarily difficult. But one factor is obviously favorable: the convergence of personal self-interest in economic terms and the broader societal interest. In most matters where people are appealed to by the leaders of their society or by their government, there is a conflict between personal economic interest and the action required to support the appeal. If, however, young and adult Americans can be encouraged to understand more clearly than most of them already do the future costs of raising a family, and if they are simultaneously told by an increasingly strong chorus of voices of recognized leaders that two-child families would, in the aggregate, be best for the nation's future, we may witness a profound change in U.S. attitudes and mores within a generation.

"Pronatalist" influences

This very possibility raises a question. If small families are in the self-interest of parents, and if people are as motivated by self-interest as we have been led to believe, why has the two-child family not become the norm long since? The answer would appear to involve seven "pronatalist" influences:

1. Substantial numbers of adult Americans, both male and female, think or feel that procreation is their surest way of finding self-fulfillment and, for some, the nearest approach to immortality that they can have any confidence in. Within this group are those who have a generous capacity for love, particularly of children, and who wish to lavish it on large families of their own.
2. Many parents—primarily mothers—seek large families as a psychic defense against lack of interesting employment, lack of a sense of belonging to a satisfying social group, or lack of other forms of self-realization.
3. Smaller numbers of people—primarily families in or near poverty—lack the knowledge and the medical services available to high-income people which would facilitate the control of their family size.
4. Large numbers of parents have strong preferences for particular sex distributions in their families. When the luck of the draw fails to present them with babies of the preferred sex, they keep trying. In many families this procedure results in more children than the preferred family size.
5. Most people are either explicitly or subtly influenced by the pervasive growthmania of American life. They believe that any economic system which is growing is healthy and good, while any which is not growing is stagnant or dying and therefore bad. Thus, an economic attitude toward growth carries over into the area of childbearing.
6. Governmental policies have reinforced the pronatalist influences of the general society and have

partially offset the economic disadvantages of children through such provisions as: high taxes on single individuals, tax deductions for children, provision of public housing and public assistance only for families with children, encouragement of single-family suburban housing of special advantage to families with many children, and so on.

7. Comparatively little educational information has emanated from leadership sources or from mass media to counteract the massive effect of the pronatalist influences listed above. Most of what has been forthcoming on the subject of population pressure has been vague, or at least not explicitly applicable to the size of the reader's or listener's family. It has seemed to apply to the poor wherever they exist, and primarily to the poor in the overpopulated and underdeveloped nations, not the United States.

Countering pronatalism

The need, therefore, is for information, analyses, proposals, policies and programs designed to overcome the pronatalist influences which surround us. Further comments on each of these influences as set forth above may help to illuminate the opportunities for study and action.

☐ *Procreation as a means of self-fulfillment.* The strength of this motivation cannot be denied. It is so strong that efforts to offset it directly would be futile. And yet the whole history of declining birth rates, wherever they have occurred in the world, proves that this motivation can be modified. Unfortunately, we know comparatively little about the specific factors which bring about differential effects upon the birth rate within different cultural groups. We need to know more. We need more intensive studies of the causative factors underlying zero or very low rates of population growth (at low vital rates) where these have been achieved. Other studies identifying the elements of motivation which may be subject to external influence, and therefore in some degree controllable, might prove of high utility.

☐ *Children as a defense against psychic deprivation.* The status of women in a post-industrial society is, without doubt, one of the key determinants of the birth rate. The more satisfying the employment opportunities which women have, the less likely they are to want large families. Women who lack the satisfactions which come from decent employment—a sense of belonging to a group, a sense of self-esteem from being able to express a talent or make a contribution to society and be paid fairly for it, and other psychic rewards—must find self-fulfillment somehow, somewhere. If, in addition to lacking employment, women lack membership in any social group with which they have rapport, they are strongly impelled to create a social group of their own by producing babies.

Greatly enlarged employment opportunities for women may be one of the most important factors in reducing average family size. There is much evidence to indicate that most women of childbearing age prefer employment at reasonably decent jobs to being full-time homemakers. If our society genuinely desires to lower its birth rate, it must find more

numerous, more satisfying and better paid opportunities for women, particularly those of childbearing age.

It may seem that advocating greatly enlarged employment opportunities for women is inconsistent with the earlier expression of concern about economic growthmania. Wouldn't a larger female work force lead to a greater GNP and therefore to greater problems of pollution and waste disposal? Not necessarily. If the additional jobs opened up for women were largely in the service area—in greatly expanded pre-school and compensatory education programs, much improved and extended school breakfast and lunch programs, more numerous and improved community health centers, "meals on wheels" for the disabled and aged, substantially enlarged art, music, library, museum and recreational services—there would be a continuing increase in the GNP but not in the products that contaminate our environment. Even permitting women to share the existing array of jobs more equitably might hasten the shortening of the work week and allow families to enjoy more leisure. A great many American families are at the point where they would prefer more leisure to more income.

Admittedly, it will not be easy to make the kinds of employment adjustments proposed, but there is no more promising approach to bringing down the birth rate than to offer satisfying employment to women, with particular emphasis on opportunities for women of childbearing age.

There are, of course, psychic deprivations other than those related to unsatisfying work. The loss of contact between people who have moved from the area of their childhood (and perhaps frequently thereafter) and any dependable group within which they can feel a sense of belonging, is one of the most shattering and demoralizing influences of our society. Various public policies (public housing projects which discourage, rather than encourage,

U.S. LABOR FORCE: THE WORK OF WOMEN AND MEN*

Job Category	% of Female Labor Force	% of All Women Aged 16 and Over	% of Male Labor Force	% of All Men Aged 16 and Over
Clerical, Sales	41	16	13	9
Service	22	9	7	5
Professional, Technical, Managerial, Proprietary	19	6	27	19
Operatives	15	6	20	15
Laborers, Farm Foremen	2	1	9	7
Craftsmen, Foremen	1	1	20	15
Farmers, Farm Managers	0	0	4	3
Totals	100	39	100	73

*As of April 1968.

Source: *Employment and Earnings and Monthly Report on the Labor Force*, U.S. Department of Labor, Vol. 14, No. 11, May 1968.

"Economic and population growth both seem to be spurred by strong fears that stagnation sets in when growth stops."

adequate social and recreational group contacts) run directly counter to the basic psychic needs of the people for whom the programs were designed. Revision of public policies to take account of such needs will help substitute other satisfactions for procreation. No program of income maintenance which assumes that all the poor need is money will fulfill the psychic needs of the uprooted poor for group identity and self-esteem. Procreation will still rank high as a means of self-fulfillment.

☐ *Unwanted births.* The family planning movement of the last half century has concentrated on helping parents have only those babies whom they want, when they want them. Most U.S. families now possess the knowledge and the means to regulate their family size and the spacing of their children. It is predominantly the poor and near-poor who do not have such knowledge and means.

In his message to Congress on population last July, President Nixon was very explicit about the provision of family planning services:

"It is my view that no American woman should be denied access to family planning assistance because of her economic condition. I believe, therefore, that we should establish as a national goal the provision of adequate family planning services within the next five years to all those who want them but cannot afford them. This we have the capacity to do." [12]

It has been estimated that there are approximately five million U.S. women in need of publicly supported family planning services and that the cost per patient per year is about $30. President Nixon has pledged himself, in partnership with the states and local communities, to see that these services will be financed and provided. His 1970 and 1971 budgets reflect this commitment—the strongest and most important ever made by a President on this subject.

There are flaws in the present approach, however. Reducing the number of unwanted children among the poor by providing free contraceptives and other services to them, while assuming that all persons above the specified poverty line will handle their family planning in a socially desirable way without such public services, may turn out to be a difficult or infeasible task. In some degree the poor are certain to think of themselves as a target group, and they may understandably construe the government's efforts as a means of trying to cut the average size of poor peoples' families below that of the general population. Careful consideration should be given, therefore, to modifying present government programs. Such modifications might make publicly financed family planning services much more widely available than at present, and to all socioeconomic classes. At the very least, several different models should be tested in various communities, including, in all general hospitals and health centers, the provision of free family planning counselling and of family planning services on a scaled payment basis.

Accelerated research in a variety of directions to improve the methods of avoiding unwanted pregnancies and births is needed; this is now a clear governmental responsibility. Most Americans unequivocally support such research, and it must be expanded as rapidly as there are competent and interested personnel to perform it. In a period of tight budgets, it is encouraging that the President has given high priority to expanding the research funds available to the Center for Population Research of the National Institutes of Health.

The subject of abortion is now at about the same stage of development and enlightenment as contraception was a half-century ago. Anti-abortion sentiment still runs so high among some groups that it is difficult in many states to enact even the most limited and humane modifications of present prohibitory statutes. Here lies a great opportunity and a stiff challenge for women's organizations and other private non-profit organizations.

☐ *Sex distribution.* The famous case of World War II Admiral Ernest J. King and his wife, who were determined to have a son and finally succeeded on their seventh try, is an example of the overriding desire for a male heir which obviously drives the birth rate up higher than it would otherwise be. It is difficult to say how such attitudes can be ameliorated; perhaps this may come about as part of a general movement toward the two-child norm.

☐ *Growthmania.* Economic and population growth both seem to be spurred by strong fears that stagnation sets in when growth stops. Ansley Coale's concern, as expressed in the following words, is probably shared by many:

"A stationary population with an expectation of life of 70 years would have as many people over 60 as under 15. The distribution would be essentially vertical up to age 50 or 55. The median age would be about 37 years.

"A society with such an age structure would not be likely to be receptive to change and indeed would have a strong tendency towards nostalgia and conservatism. A French writer has characterized a stationary population as 'a population of old people ruminating over old ideas in old houses.' As Myrdal pointed out years ago, in a stationary population there is no longer the consonance that there is in a growing population between the pyramid of responsibility and the age pyramid." [2]

Such fears can often by allayed by sober and reasoned analysis. Craftsmanlike, multidisciplinary research into the social, psychological, biological and economic stresses which would be placed upon the individuals and institutions of society and the fauna and flora of our biosphere—assuming several different economic and population growth rates for the balance of this century—would be of great value. A substantially slower population growth rate would ease the shortage of adequate housing, for example, and thus possibly blunt the sharp cutting edge of racial tension. On the other hand, declining growth rates in the GNP, partially brought about by a slower rate of population growth, would increase problems of employment and income redistribution. A systems analysis approach to the operations of the

economy and the society on varying demographic assumptions might help to illuminate the factors that require anticipatory planning.

☐ *Social and governmental pressures and incentives favoring marriage and children.* Numerous social norms and governmental policies are heavily stacked in favor of marriage and children. Unmarried women in particular have been made to feel they are social failures. Tax laws which bear heavily on single people, tax exemptions for children, public housing and public assistance for families with children but none for individuals or married couples without children, an FHA program which has created Suburbia, U.S.A. mostly for families with children—these and many other policies of government display a bias in favor of the social norm that everybody should marry and have a family. That the time is ripe for revision of such policies is evidenced by the small but important initial step which has just been taken to reduce federal income taxes on single persons.

☐ *Inadequate leadership against pronatalist forces.* The structure of our society is such that very few people can exercise leadership in redirecting public attitudes toward population growth—and make a living at it. Through its enthusiasm for growth and for the prospects of enlarged profits which might come from a larger population, the vast matrix of U.S. business enterprise creates a pro-expansionist and, less explicitly, a pronatalist atmosphere which is as subtle and pervasive as the air we breathe. Who is to finance a program, and where is the leadership to come from, to counter this emgracing pronatalist influence? This is a crucial question.

ACHIEVING A STATIONARY POPULATION: SOURCES OF LEADERSHIP

The beginnings of the necessary leadership already exist in various private, non-profit organizations. More such leadership and possibly the means of financing it might emerge if President Nixon's proposed "Commission on Population Growth and the American Future" should discuss in earnest the desirability of achieving a stationary U.S. population. Among the American people there are certainly persons with leadership potential who wish they could earn a living by pursuing their conviction that a zero growth rate is essential to stem the degradation of our physical and social environments.

Until and unless governmental support for such people becomes available, private individuals and private non-profit and educational organizations must fill this urgent and obvious need.

School and college curricula

One of the most hopeful and essential means of bringing birth rates down to the replacement level is to introduce this entire subject into the curricula of schools and colleges. If students are to cope with the com-

"Ecology and demography should launch an ecumenical movement— a goal sought more by ecologists than demographers."

plex world which they will soon govern as leaders and voters, no more important subjects can be set before them than the growth of human populations, the deterioration of our environment, the decline of many social services, the erosion of personal and political freedom, and the relationships among all these trends.

Ecology, more as a mode of analyzing and viewing our physical and biological world than as a precise experimental science, could, in the 1970s, become a fulcrum of school curricula around which many other disciplines would pivot. Biology, geography (greatly enlivened by infusions of economics), demography, geology, agronomy, anthropology (with much greater emphasis on natural history and the changing relationships of man to his environment, how he has treated it and how it has treated him) and other disciplines can all contribute to a deeper understanding of our world ecosystem. Ecology is the highest form of systems analysis.

Within this framework, it is essential to stress the relationship of human population trends to the physical and biological world. Approaches to balancing population and resources and otherwise assuring the bases for human survival must also be studied. Underlying all these lines of inquiry should be a clear recognition of education's highest calling: to reinforce and, where necessary, to help change public mores.

Our educational establishment, from elementary school through the post-graduate college years, can perform no more useful service in the 1970s than to illuminate the principles of human survival and to dedicate itself to preserving and enhancing the quality and diversity of life.

Institutes for ecological study

Institutes for ecological study are emerging in various universities as ecology outgrows its concentration on natural areas remote from human influence. Ecologists now realize that they must study, and study fast, the diverse relationships between man and his *total* environment. Through the eons of time, the dynamic balance of nature—the ecologist's center of attention—has been continually changing, and its largely gradual shifts have seldom caused the simultaneous extinction of numerous species. But we are just beginning to realize that man has caused extremely rapid and radical changes which have produced cataclysmic results. The survival of countless organisms, including man himself, is at stake.

In the September 1969 issue of *Harper's,* John Fisher proposed the creation of a whole university which would study the environmental factors essential to man's survival.[6] It is an intriguing idea, but it would be even more effective if all existing major universities set up interdisciplinary institutes devoted to this concept. Ecology, resource management, the politics and economics of conservation and pollution control, demography and geography in their broadest sense, and other studies

focused on the common theme of enhancing man's living space and heightening his ecological awareness deserve even greater emphasis in the 1970s and 1980s than space exploration received in the 1960s. If this new emphasis should emerge, it is a virtual certainty that one major condition of human survival which would be stressed by ecologists and their confreres would be a zero growth rate (and conceivably a slow rollback) of human populations. Ecology and demography should launch an ecumenical movement—a goal which is presently sought more by ecologists than by demographers.

It is highly encouraging that the President released, on November 5, 1969, a report entitled "The Universities and Environmental Quality—Commitment to Problem-Focused Education."[15] The report was prepared for the President's cabinet-level Environmental Quality Council. It recommends federal support for the formation of Schools of Human Environment at universities, draws a comparison with federally aided Schools of Agriculture and Public Health, and calls attention to the shortage of broadly trained professionals to deal with environmental problems. A tenfold to hundredfold expansion of present efforts is said to be possible.

The urgent need to achieve a stationary population, and perhaps eventually to roll it back slowly, cannot help but become a major component of study in any Schools of Human Environment. Any reasonable strategy for accomplishing zero growth deserves a leading place on the agenda of such institutions, and the need for federal aid to create these institutions should be put high on the list of national budget priorities.

Conservation organizations

The largest aggregations of people in the country who are organized and committed to prevent further deterioration of the environment are found in the various conservation organizations. Those people can and should be drawn into a closer understanding of the need to stop the growth of the U.S. population. Some of them have already moved to incorporate in their educational programs the objective of at least slowing population growth. Today they can profitably use research materials for discussion and education on achieving a lower or stationary growth rate and on the ways in which the climate of social opinion can be changed toward this end.

Commissions and conferences

The President's proposal for the creation, by Congress, of a Commission on Population Growth and the American Future seems certain to be enacted. It is to conduct a two-year study with an interim report after one year. If its membership chooses, the Commission can give careful attention to establishing a target date (or decade) for achieving a stationary population within the United States. Nothing in the President's Message to Congress on Population either encourages or discourages such a course of action. The way is thus open for putting this subject on the agenda if enough interest is shown by concerned citizens. It would be most unfortunate not to have the Commission give the most thoughtful consideration to this topic.

A privately sponsored "First National Congress on Optimum Population and Environment" is scheduled for June 7-10, 1970 in Chicago. It will bring together representatives of a wide variety of disciplines. While its recommendations will have no official status, they will hopefully be well-formulated and cogent enough to stimulate widespread discussion and exert some degree of influence upon both individual and offical attitudes.

Organized local discussion groups leading up to and following such national conferences are important elements in bringing about shifts in private attitudes and public policies.

THREE CLOSING CONSIDERATIONS

This paper has attempted to put the subject of population growth in context with other factors which threaten the safety and quality of our lives. Three final points will help to illuminate the relationship between U.S. population growth and other hazards to our national and international environments.

Pollution and the birth rate

If the nation moves resourcefully to lift its present burden of air, water and land pollution, and if it then adopts a genuine "clean-up-as-we-go" policy, the costs will be enormous. A spokesman for the Bethlehem Steel Company was quoted recently as saying, in connection with announced steel price increases, that air and water pollution control will cost his firm 11 percent of its total spending in the next five years. Obviously, the consumer will pay for these improvements through higher prices on all items made of steel. The added costs will be more on some products than on others, but there is little doubt that general consumer prices will go up markedly if all producers of power and goods are required to comply with strict anti-pollution standards. Paying this heavy bill may, in some degree, diminish the U.S. birth rate.

The worldwide drop in birth rates during the Great Depression of the 1930s is highly indicative of a general human behavioral pattern. When families have achieved an advanced standard of living, they are very reluctant to give it up. Thus, should their income drop, they first eliminate expenses which they do not consider essential to their traditional mode of living. One such expense is additional children. Fertility rates in the United States fell to an all-time low during the Depression years. In the minds of most married people, protecting one's standard of living takes precedence over having a large family.

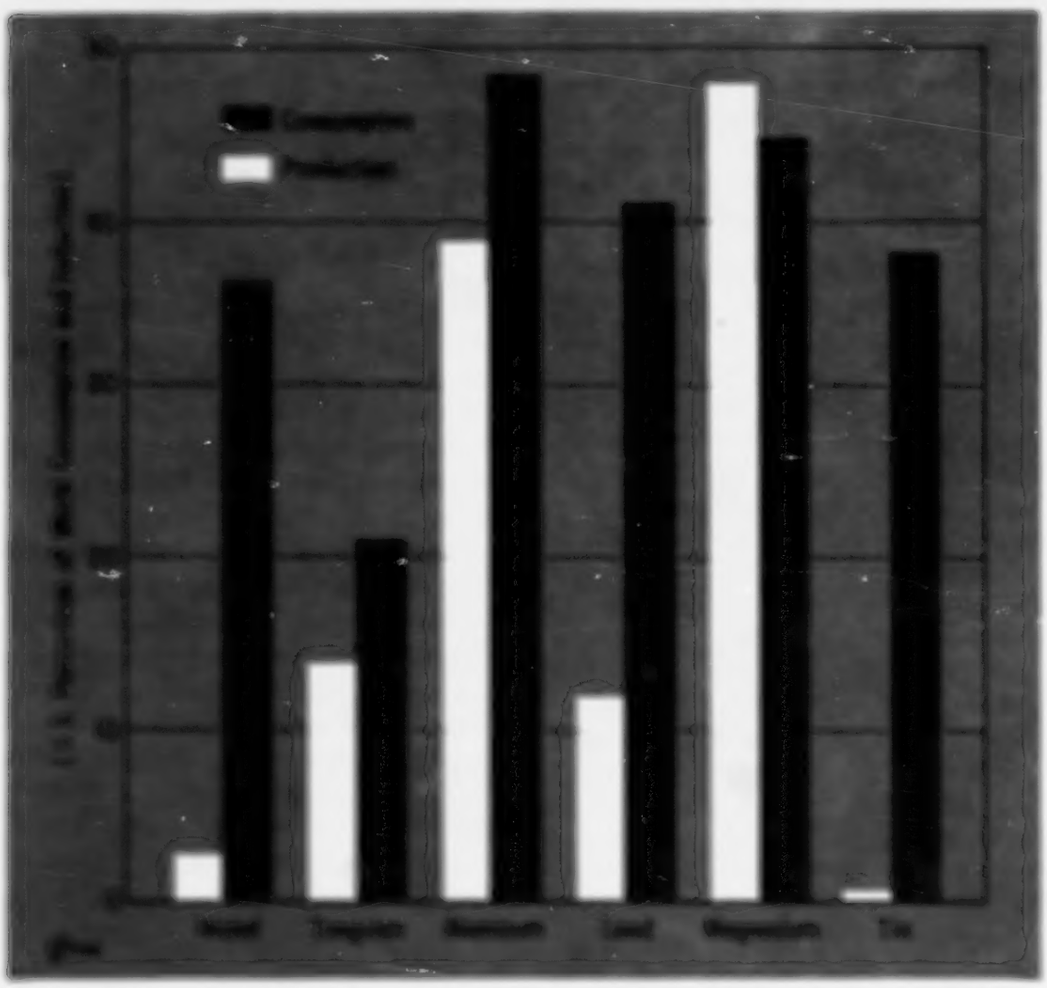
If there should be a decline in the American family's income as a result of a strong anti-pollution drive (coupled with other costly outlays for improved public services of all kinds, since many have deteriorated below the level of tolerability), the effect would probably be a further diminution in the birth rate. Even if the cumulative effect of these outlays should be a substantially lower rate of increase in real income rather than an outright decline, the birth rate would probably fall in response to the pocketbook squeeze. A "pay-as-we-go" policy in respect

to our environment could therefore be doubly beneficial.

International implications

Because of America's high rate of production, consumption and waste disposal, 205 million Americans are depleting the world's resources and polluting the natural environment more than the 2.5 billion inhabitants of the less developed nations. Conservative estimates indicate that the average child born in the United States will put at least 25 times as much stress on the environment as the average child born in India. The "environment" is not confined to the neighborhood or even to the nation in which each individual lives. Nor are the use of scarce and irreplaceable resources and the pollution of the biosphere a neighborhood or national matter; these assaults on the environment are worldwide in

U.S. SHARE OF WORLD CONSUMPTION AND PRODUCTION, SELECTED MINERALS, 1967



The wealthier a population, the more it taxes the world's natural resources. As U.S. real per capita income rises, so does the nation's dependency on mineral imports from abroad.

Source: Statistical Abstract of the United States 1968, U.S. Department of Commerce.

scope. They are certain to generate an increase in international frictions, of which we already have a more than ample supply.

An additional 100 million Americans with much higher per capita rates of consumption than at present would aggravate this disparity considerably. Yet we behave as if only the less developed countries, never we, were in urgent need of controlling population growth. This view of the world betrays an acute case of national myopia.

A concerted effort to achieve a stationary U.S. population could thus have an important effect internationally. The less developed nations have not established policies or targets which explicitly seek stationary populations within a specified period of time, let alone programs which have some possibility, however remote, of achieving such a goal. A serious effort by the United States to set its own house in order and develop the various methodologies required to bring birth rates into balance with modern low death rates might have a far greater impact on other nations than all our offers of technical assistance in the limited field of family planning. Meanwhile, without a genuine effort by the United States to bring its own growth rate down toward the zero point, both the credibility and the motives of this country in seeking to persuade other countries to curb their population increases are suspect.

Whose baby?

Evidence is accumulating that if man does not make a quantum jump in the perception of his own self-interest, his very survival may be in peril. A limited human population can, hopefully, learn to live peaceably with itself and with the fauna and flora of the earth in whose kinship all men have evolved. A continued increase, without letup, beyond our present massive population levels is masochistic and suicidal. Consuming the earth's bounty at feverish rates, paying no heed to nature's balances and to the interdependence of all living things, is a formula for human extinction. That man is already consuming more than his share of nature's abundance is evident by the continuing and escalating extermination of hundreds of species of fauna and flora. That man is crowding and contaminating his environment to a point where the quality of his own existence and his enjoyment of life are rapidly deteriorating is self-evident on every hand.

Unless all those who are deeply concerned about man's fate convert their convictions into programs designed to stem the growth of the U.S. population as rapidly as feasible and hopefully well before it reaches 300 million; unless they recognize that during the decade of the 1970s, *they* must take the initiative to change the climate of opinion; unless they see that the government will not act until a large enough body of opinion exists to bring pressure for changes in policies and incentives; unless they devote significant amounts of their time and resources to bringing about this new perception of man's self-interest, the downhill slide may become irreversible.

Who's baby is the population problem? It is the baby of every understanding, sympathetic and farsighted prospective parent who is willing to adopt it. ■

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